

CONCORDIA UNIVERSITY

Council of the Faculty of Engineering and Computer Science

Minutes of Meeting 2004-07

held

Friday, November 5, 2004, 2:00 p.m., H-769

| | | | |
|-----------------|---------------------------------|----------------|-----------------|
| Present: | N. Esmail (<i>Chair</i>) | T. Fancott | A. Limoges |
| | M.O. Ahmad | T. Fevens | W.E. Lynch |
| | S.T. Alkass | W. Ghaly | B. Mackenzie |
| | B. Ashtakala | M.R. Hajiaboli | S. Mudur |
| | S. Bergler | L. Harris | M.D. Pugh |
| | R. Bhat | S.V. Hoa | A.S. Ramamurthy |
| | M. Chiem | N. Howe | Y.R. Shayan |
| | J. Covey | J. Jasinski | C.W. Trueman |
| | M. Debbabi | F. Khendek | M. Zaheeruddin |
| | K. Demirli | C. Lam | R.G. Zmeureanu |
| | M. Di Pietrantonio | E. Lapointe | |
| | (<i>Secretary of Council</i>) | H.F. Li | |
| | R. Dssouli | Q. Li | |

Observers: None were present

| | | | |
|-----------------|----------------|--------------|----------------|
| Regrets: | S. Ghaderpanah | R. Mizouni | M.R. Soleymani |
| | I. Hassan | C. Paradisis | L. Zack |
| | R. Melkonian | L. Quesnel | |

1. Adoption of Agenda

Motion *That the Agenda be adopted, as submitted (S.V. Hoa, R. Dssouli)*

2004-07-01

Vote: *Carried unanimously*

2. Adoption of the Minutes of Meeting 2004-06

Motion *That the Minutes of Meeting 2004-06 (November 5, 2004) be adopted, as submitted (R. Dssouli, W.E. Lynch)*

2004-07-02

Vote: *Carried unanimously*

Chair's Remarks

The Chair had no other remarks except to re-iterate that the work on the New Building is on target, and the move will take place during the months of April to August 2005.

CLOSED SESSION

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OPEN SESSION

5. Graduate Curriculum Changes from the Departments of CSE, BCEE, and MIE (Document ECFC 2004-07-01)

Dr. Bhat moved the above-mentioned document, reflecting the changes and new curriculum proposals submitted by the Departments of CSE, BCEE, and MIE, respectively.

5.1 Department of Computer Science and Software Engineering

Program Changes:

- p. 2. Program requirement changes to the Master of Applied Computer Science
- p. 3 Reflect addition of one new course **COMP 6231 *Distributed Systems Design*** in Topic Area C02 – *Computer Architecture*
- p. 4 Reflect:
 - a. Addition of one new course **COMP 6441 *Advanced Programming Practices*** in Topic Area C04 – *Software Systems and Languages*;
 - b. Deletion of two existing courses: **COMP 7421 *Operating Systems Design*** and **COMP 7461 *New Directions in Programming Languages*** in Topic Area C04 – *Software Systems and Languages*

- p. 5 Reflect:
- a. Addition of one new course **COMP 6521 Advanced Database Technology and Applications** in Topic Area C05 – *Information Processing and Management*;
 - b. Deletion of three existing courses: **COMP 6511 Database Design**, **COMP 6571 Office Automation**, and **COMP 6581 Structure of Information Systems** in Topic Area C05 – *Information Processing and Management*
- p. 6 Reflect:
- a. Change in existing course title of **COMP 6651 Design and Analysis of Algorithms** to new **COMP 6651 Algorithm Design Techniques** in Topic Area C06 – *Theoretical Computer Science and Algorithms*
 - b. Deletion of one existing course **COMP 6631 Discrete System Simulation** in Topic Area C06 – *Theoretical Computer Science and Algorithms*
- p. 7 Reflect deletion of two existing courses: **COMP 7711 Artificial Intelligence** and **COMP 7781 Multimedia Computing and Systems** in Topic Area C07 – *Artificial Intelligence and Man-Machine Communication*

Course Changes:

- p. 8 Introduction of new course **COMP 6231 Distributed Systems Design**
- p. 9 Introduction of new course **COMP 6441 Advanced Programming Practices**
- p. 10 Change in course description of **COMP 6461 Computer Networks and Protocols**
- p. 11 Change in course description of **COMP 6471 Software Design Methodologies**
- p. 12 Addition of one new course **COMP 6521 Advanced Database Technology and Applications**
- p. 13 Change in existing course title of **COMP 6651 Design and Analysis of Algorithms** to new **COMP 6651 Algorithm Design Techniques**
- p. 14 Change in course pre-requisite requirement for **COMP 7531 Database System Principles**

Course Deletions:

- p. 15 Deletion of existing course **COMP 6511 Database Design**
- p. 16 Deletion of existing course **COMP 6571 Office Automation**
- p. 17 Deletion of existing course **COMP 6581 Structure of Information Systems**
- p. 18 Deletion of existing course **COMP 6631 Discrete System Simulation**
- p. 19 Deletion of existing course **COMP 7421 Operating Systems Design**
- p. 20 Deletion of existing course **COMP 7461 New Directions in Programming Languages**
- p. 21 Deletion of existing course **COMP 7711 Artificial Intelligence**
- p. 22 Deletion of existing course **COMP 7781 Multimedia Computing and Systems**

Motion
2004-07-18

That the program/course changes and course deletions for CSE, set out on pages 2-22 of Document ECFC 2004-07-01, be approved by Council
(R. Bhat, C. Lam)

Vote: Carried unanimously

5.2 Department of Building, Civil and Environmental Engineering

Program Changes:

- p. 2 Reflect title change and change/deletion of existing course prefix/code of **ENGR 6651 Passive Solar Heating** to new **BLDG 6951 Passive Solar Building Design** in Topic Area E07 – *Energy Conversion*
- p. 3 Reflect title changes and changes in existing course prefixes of three courses in Topic Area E21 – *Integrative Studies for Building Engineering*: **ENGR 6151 Database Applications in Engineering** to new **BLDG 6151 Database Applications in Building and Civil Engineering**; **ENGR 6221 Design of Computer-Aided Engineering Systems** to new **BLDG 6221 Design of Computer-Aided Systems in Building and Civil Engineering**; **ENGR 6231 Applications of Artificial Intelligence in Engineering** to new **BLDG 6231 Applications of Artificial Intelligence in Building and Civil Engineering**

- p. 4 Reflect change/deletion of existing course prefix/code for ENGR 6721 *Trenchless Technology for Rehabilitation Works* to new BLDG 6921 with same title in Topic Area E24 – *Construction Management*
- p. 5 Reflect change/deletion of existing course prefix/code ENGR 6731 *Infrastructure Rehabilitation* to new BLDG 6931 with same title in Topic Area E31 – *Structural Engineering*

Course Changes:

- p. 6 Change in course description, title and existing course prefix/code of ENGR 6151 *Database Applications in Engineering* to new BLDG 6151 *Database Applications in Building and Civil Engineering*
- p. 7 Change in course description, title and existing course prefix/code of ENGR 6221 *Design of Computer Aided Engineering Systems* to new BLDG 6221 *Design of Computer Aided Systems in Building and Civil Engineering*
- p. 8 Change in course description, title and existing course prefix/code of ENGR 6231 *Applications of Artificial Intelligence in Engineering* to new BLDG 6231 *Applications of Artificial Intelligence in Building and Civil Engineering*
- p. 9 Change in course description, title and change/deletion of existing course prefix/code of ENGR 6651 *Passive Solar Heating* to new BLDG 6951 *Passive Solar Building Design*
- p. 10 Change in course description and change/deletion of existing course prefix/code ENGR 6721 *Trenchless Technology for Rehabilitation Works* to new BLDG 6921 with same title
- p. 11 Change in course description and change/deletion of existing course prefix/code ENGR 6731 *Infrastructure Rehabilitation* to new BLDG 6931 with same title

Motion
2004-07-19

That the program and course changes for BCEE, set out on pages 2-11 of Document ECFC 2004-07-01, be approved by Council
(R. Bhat, W.E. Lynch)

Vote: Carried unanimously

5.3 Department of Mechanical and Industrial Engineering

Program Change:

- p. 2-3 Reflect addition of new course **MECH 6941 Concurrent Engineering in Aerospace Systems** in Topic Area E11 – *Aerospace*

Course Change:

- p. 4 Introduction of a new course **MECH 6941 Concurrent Engineering in Aerospace Systems**

Motion
2004-07-20 *That the program and course changes for MIE, set out on pages 2-4 of Document ECFC 2004-07-01, be approved by Council*
(R. Bhat, S.V. Hoa)

Vote: Carried unanimously

6. Graduate Curriculum Changes from the Department of ECE for COEN courses (Document ECFC 2004-07-02A)

Dr. Bhat moved the above-mentioned document, reflecting new curriculum proposals submitted by the Department of ECE for COEN courses.

Program Changes:

- p. 3-4 Reflect introduction of two new general 'umbrella' courses: **COEN 691 Topics in Computer Engineering I** and **COEN 791 Topics in Computer Engineering II** in Topic Area E02 – *Developments in Engineering*

Course Changes:

- p. 5 Introduction of a new general 'umbrella' course **COEN 691 Topics in Computer Engineering I** for Selected Topic slot courses in Computer Engineering at the 6000 level
- p. 6 Introduction of a new general 'umbrella' course **COEN 791 Topics in Computer Engineering II** for Selected Topic slot courses in Computer Engineering at the 7000 level

Motion *That the program and course changes for COEN 691/791, set out on pages 3-6*
2004-07-21 *of Document ECFC 2004-07-02A, be approved by Council*
 (R. Bhat, M.O. Ahmad)

Vote: Carried unanimously

7. **Graduate Curriculum Changes from the Department of ECE for ENCS and ENGR courses (Document ECFC 2004-07-02B)**

Dr. Bhat moved the above-mentioned document, reflecting changes and curriculum proposals submitted by the Department of ECE for ENCS and ENGR courses.

Program Changes:

- p. 2 Reflect deletion of existing course **ENCS 6121 *Applied Functional Analysis*** in Topic Area E – *Mathematical Methods*
- p. 3 Reflect change of existing course code for **ENGR 6181 *Digital Control of Dynamics Systems*** to new **ENGR 7181 *Digital Control of Dynamic Systems*** in Topic Area E03 – *Systems and Control*
- p. 4 Reflect deletion of two existing courses: **ENCS 6551 *Introduction to VLSI*** and **ENCS 7571 *Computational Algorithms for VLSI Design*** in Topic Area F03 – *Application Specific Integrated*

Course Changes:

- p. 5-6 Addition of Exclusion Clause for **ENCS 6161 *Probability and Stochastic Processes***
- p. 7 Change of existing course code, description and pre-requisite of **ENGR 6181 *Digital Control of Dynamics Systems*** to new **ENGR 7181 *Digital Control of Dynamic Systems***

Course Deletions:

- p. 8-9 Deletion of existing course **ENCS 6121 *Applied Functional Analysis***
- p. 10 Deletion of existing course **ENCS 6551 *Introduction to VLSI***

- p. 11 Deletion of existing course ENCS 7571 *Computational Algorithms for VLSI Design*

Motion
2004-07-22 *That the program/course changes and course deletions for ENCS and ENGR, submitted by the Department of ECE, be approved by Council as set out on pages 2-11 of Document ECFC 2004-07-02B (R. Bhat, M.O. Ahmad)*

Vote: Carried unanimously

8. **CIISE Graduate Programs for Information Systems Security**
(Document ECFC 2004-07-03)

Dr. Bhat introduced Document ECFC 2004-07-03, originally combining the two new graduate programs into one document. A revised document, separating the new Master Programs into 2 documents, was distributed at the meeting.

- ✓ Master of Applied Science in Information Systems Security (49 credits)
- ✓ Master of Engineering in Information Systems Security (45 credits)

Dr. Dssouli presented Document ECFC 2004-07-03, as per the following points below:

Rationale:

The establishment of M.A.Sc. and M.Eng. programs in Information Systems Security will heighten the visibility of the Engineering and Computer Science Faculty, as well as Concordia University. In fact, the proposed program – the first of its kind in Quebec and Canada – would establish Concordia University as a leading contributor to the academic standing of the field, in addition to crystallizing the ideas, plans, and mission underlying the genesis of the Concordia Institute for Information Systems Engineering.

The academic goal of these programs is to provide students with the skills, knowledge, and cutting-edge technology in order to become security architects, capable of designing, implementing, analyzing, and managing the security of real-life information systems. These programs – which combine an integrated set of complementary, mandatory, and non-overlapping courses – will endow graduates with a complete expertise in the area of information systems security.

Social, Economic and Cultural Value:

Emerging as the most important challenge of this electronic era, the need to train individuals in information systems security is becoming essential for government and industry. All corporations, especially medium and small businesses, will benefit from

the availability of security expertise through the graduates of this program, resulting in savings on the cost of the required training to secure their information systems.

Justification and Related Courses:

The five proposed courses are new. A security course currently exists in the Department of Computer Science and Software Engineering, however, it has not been not been taught for several years. As a result, a suggestion has been made to the Department of CSE to revamp this course, and offer it to all students as an introductory course.

E69 – Topic Area: Information Systems Security

| | |
|-----------|--------------------------------------|
| INSE 6110 | Foundations of Cryptography |
| INSE 6120 | Crypto-Protocol and Network Security |
| INSE 6130 | Operating Systems Security |
| INSE 6140 | Middleware and Application Security |
| INSE 6150 | Security Evaluation Methodologies |

Prediction on Population:

According to the needs compiled by government and industry sources, it is anticipated that the enrolment for the proposed program will be very high. A conservative estimate of the enrolment plan is depicted as follows: 15 students in Year 1, and 30 students (cumulative), in subsequent years.

Based on a survey conducted among 120 undergraduate and graduate students in the Faculty, 50% of undergraduates would consider applying to this specialized program should they decide to pursue graduate studies. 80% of the graduate students polled would have liked to take this program.

Resource Implications:

A dedicated Teaching Laboratory

A minimum of 30 workstations for the teaching laboratory

- A file server
- Hardware firewalls and security gateways
- Network switches
- Software
 - Anti-virus toolkits
 - Firewalls
 - Intrusion detection systems
 - Crypto APIs
 - Security evaluation

- Documentation
 - Security evaluation methodologies: Marion, Mehari, etc.
 - Dedicated books

The program would require the following human resources:

- The involvement of six faculty members to support the teaching duties and supervision of students in this program. Five faculty members are already available, and one position is open to support this program in the areas of operation systems security or systems security
- Research and supervision of students
- Course sections for the equivalent of five, 4-credit core courses will be required to implement this Master of Engineering program
- A one-quarter time (0.25) graduate program assistant position
- A one-quarter time (0.25) technical staff position

Changes suggested to Document ECFC 2004-07-03:

- Editorial change to M.A.Sc. proposal – Page 14 of document re: Graduate degree should read Master in Computer Science, instead of Master in Computer Science and Software Engineering
- On Calendar Update Form B:
 - Courses listed under Present Text should be deleted
 - **Graduate Certificate in Network Management & Service Engineering** indicated under Present Text should be moved to Proposed Text to ensure that this information is not dropped from the Calendar
 - Remove CIISE's **Objectives** from Present Text since Program Objectives are listed under Proposed Text

A discussion ensued regarding the credit value to assign to the new graduate programs and research thesis in Information Systems Security. After some deliberation, Council members agreed to amend the document by proposing to approve, on an exceptional basis, a 45-credit program/25-credit research thesis, on the basis that the Graduate Studies Committee provide parameters defining the nature of a research thesis and master program (irrespective of the number of credits).

Motion
2004-07-23

That Document ECFC 2004-07-03 be approved by Council, as amended
(R. Dssouli, A. Ramamurthy)

Vote: Carried unanimously

9. **Other Business:**

There was no other business to report.

10. **Adjournment:**

The meeting was adjourned at 4:00 p.m.


Mary Di Pietrantonio
Secretary of Council